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## II

### Common and Disparate Elements in National Growth and Decline

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## 1 Introduction

In the light of my well-known leanings toward consideration of qualitative aspects of problems, it seems likely that my intended role in this discussion is that of devil's advocate, looking out for pitfalls and limitations in the indicated type of study. It is not only inductive, but the central concept is quantitative, and lends itself to what seems to be the current trend toward construing inductive study as mainly or exclusively quantitative in character. As to this, non-quantitative inductive study seems to me enormously important, and deserving of all possible support in an age increasingly devoted to statistics. While 'growth' is a purely quantitative concept, the conditions of growth do most emphatically include qualitative elements.

It is less important how fast we are growing than whether our growth is sound. Our economy can expand quantitatively, to the ruin of subsequent generations, in a variety of ways, including soil-mining and, what may be more serious, the erosion of the social-moral basis which is nowadays more important than ever as a foundation for an economic system that will work. In view of this, the focussing of the study on a quantitative concept ought to mean that we should take special precautions to keep ourselves reminded that growth is merely quantitative; and fight shy of naively identifying it with qualitative progress, as we used to do not long ago, with what now seems ill-founded optimism. In talking of proved achievements, it is altogether fitting and proper to limit our claims in this way. But it would be a calamity if we went on to speak and think as if the quantitative facts were all we needed to know: if we forget to ask ourselves the qualitative questions about these facts. Does our growth

constitute progress? Is it of sound and desirable quality? We need to keep that question constantly before us, at the same time that we resist the temptation to think we can give it a simple and categorical answer from the quantitative evidence alone.

## 2 What is Growth?

But if progress is an elusive concept, that does not mean that the more tangible concept of growth is simple and wholly unambiguous. It should be a commonplace that growth, as measured by the economic dimensions of a society and its activity, includes a good many expansions that are measures of impoverishment rather than enrichment. In modern urban life we work and pay for things that are free goods in a more primitive and rural setting, or we pay high for things that come cheap under simpler conditions. As man develops beyond the primitive tropical economy, he outgrows the capacity to live by reaching out and gathering the products that nature furnishes free. And his prepared foods sometimes lack needed elements. We spend labor removing vitamins from foodstuffs, and more labor supplying the man-made deficiency. Hospitals treat urban infections and cure the stomach-ulcers that come from the strains of modern life. The science that has brought vast economic growth is ending by threatening to destroy the human race. If the calamity of atomic or biological war is escaped, there remains the cost in conflict, sabotage and hatred, of the struggle between hostile social systems, which are really rival methods of adapting institutions to the changing techniques that have brought this great quantitative growth.

Our enlarging activities bring a multitude of by-products, some welcome and some the opposite. Few of us would want to become savages

with little to do to support life but sit under a palm-tree -- a caricature, of course, of actual primitive existence. Aside from getting more goods, we accept a more active and laborious life as in itself desirable. And if put to it, we should probably concede that some of the activities we engage in only for ulterior purpose ('work') are better for us than some of the activities we engage in for their own sakes ('play' or 'recreation'.) Conceivably, at certain stages or in certain conditions, an impoverishment that forces men to greater activity to neutralize its effects might be a great benefit to the race, by the best standards we can muster. But from this standpoint, the changes in activity which have come with modern urban industry are of distinctly dubious character. And the stresses of this age of social-national-racial conflict and readjustment have long since exceeded what might be welcomed as affording a healthy exercise for our political and social aptitudes.

In Toynbee's terms, we are facing one of those 'challenges', which a civilization is either barely able to meet, or just not able. If we survive, it will be because, on pain of perishing, we have been driven, in fear and anguish, to make a major advance in the art and structure of civilized life. If we fail -- and failure is an ever-present threat -- there will presumably follow an age as dark as that which followed the downfall of Rome. Even if the race does not go back to stone axes, it will witness the destruction of centuries of slow and costly progress in freedom, truth, integrity and humanity, after which the slow process will have to begin again. This threat is clearly a result of the same factors that have given us our great economic growth. Whether something

good will come out of it, or only terrible evil, no one can be sure.

The upshot is that a yardstick of economic growth, which measures only partly the fruits of economic activities, and partly the efforts and activities themselves, is not therefore necessarily a wrong standard as an index of welfare; but neither is it necessarily a right one. It depends mainly on the quality of the activities.

Perhaps it is uncalled-for to stress this point so much; but one must anticipate that any such study as we are considering will, if it is successful, inevitably furnish a yardstick that will be used and abused by people who tend to accept it at its face value, and who have either no idea of its limitations, or nothing like as clear an idea as the investigators who devised the measuring-rod.

Under what conditions might quantitative growth be a fair rough index of real economic advance? If it includes comparatively few increases that represent impoverishment rather than enrichment, and comparatively few changes that spell deterioration in the quality of activity; if something is done to furnish remedies or offsets for the unfavorable changes; and if some reasonable deduction is made for the cost of these remedies or offsets, before the net result is presented in a way that might cause it to be taken as an index of economic improvement. If something of this sort cannot be successfully done, then another way of dealing with the same difficulty might be to let every page of the resulting study bear the legend, in red letters, "This is not an index of progress or improvement", and to make a separate study of those features of economic growth which are accepted without controversy as representing improvement, and let this tell its own story.

There is a special reason for regarding more production as in itself an index of gain, aside from our need for the end-products, in an economy that must go on expanding or suffer unemployment. The job itself is an asset. But if that is the best justification we can muster for the increased production, it is a confession that we have not solved the problem of making rational use of our productive power. It is probably a defect of our national character that, if we can solve a problem, or stave it off, by producing 'more of the same', we will prefer that treatment to a solution that calls for any change in our settled ways of doing things. Though the latter kind of treatment might be more enduring and fundamental, it involves the risks of breaking new trails, and of treading on many toes.

For example, at the peak of a boom, we are making durable capital outlays at a rate too fast to be maintained by spontaneous demand. There are two remedies of the sort I have called 'quantitative'. We could cut down the excess capital outlays at the boom level; and if we succeeded we should be whittling down the boom. If this in turn escaped precipitating a depression, it would probably level activity out at an average between boom and depression. Then there would be the problem of absorbing some chronic unemployment. Or, secondly, we could find work to keep the durable-capital-goods industries working at something like boom levels. And all the while this condition implies that we are creating fewer consumption goods, or less leisure, or both, than our economy could supply if it were using its full productive powers and allocating them in proportions that would be matched by sustained demand. But to find this sustainable balance involves a difficult readjustment, with the uncertainties that go with change in our ways of distributing income, and in our



system of incentives. The purely quantitative solution is less disturbing. But enough of this digression.

### 3 Dimensions of Growth

Several dimensions of growth are indicated as sure to be used in such a study; and there are some that are less likely to be used, but deserve consideration. It will be worth-while to look at these dimensions and ask what they are indexes of -- what economic conditions they register.

(1) Gross national product, deflated by some reasonably appropriate price index. Presumably, the most appropriate one would be neither a straight wholesale price index nor a straight consumer-goods retail price index, but some sort of combination, including capital goods. It includes, of course, replacements, or the excess of gross capital formation over depreciation, and faces the problem, among others, whether the orthodox allowances are enough to maintain real capital under price inflation. It is a measure of gross utilized economic power.

(2) National income, net after deducting replacements, involves the same problem. It also includes plus or minus balances due on transactions with other countries. An outstanding instance of a big discrepancy introduced by this factor is Britain's present, compared to its prewar position.

(3) The same quantities, per capita or per adult consuming unit. This is apparently the most pertinent index of utilized power available for 'economic welfare' -- with the qualifications already indicated.

(4) Hours of work. Insofar as they may be less than some standard representing maximum production, the difference represents reserve economic power available for emergencies. The maximum would differ with

different peoples and different methods of production, and would be different for a short emergency from what could be maintained usefully over a longer pull. It seems likely that historical changes in this maximum are not freely and completely reversible. This concept might be broadened to include changes in the percentage of the population economically employed. A shortening of hours, or a reduction in the economically employed fraction of the population, may have two opposite meanings. It may represent a voluntary division of the fruits of increasing productiveness between more goods and more leisure -- an index of capacity for greater welfare, if we are wise enough to utilize it in that way. Or it may mean failure to afford opportunity for as much production of goods as people would voluntarily choose -- a minus quantity on the scale of welfare.

(5) Total population of the economic unit studied. Professor W. F. Willcox once suggested increasing density of population as, in some much-qualified sense, an index of increasing 'adaptation'. The necessary qualifications are serious. Most students would say it represents poorer adaptation if it means merely increased Malthusian pressure. And the increases in population of leading industrial countries in the past two centuries raise serious problems of their long-run reactions, some of which are now becoming visible. They may represent the fact that these countries had capacity available for adaptation, some of which has, to an uncertain extent, been misused, so that the potential of improved adaptation has not been realized, or only partially. Obviously, where per capita measures are used, population appears in the denominator of the index, not the numerator.

For purposes of defense, a larger population than that of potential

enemy countries is clearly an asset, if it is not bought at the sacrifice of per capita industrial power. In relation to the theory of a 'mature economy', there is the highly controversial claim that increasing population is a benefit in making it easier to stave off the dilemma which the 'mature economy' poses. This theory contains paradoxical elements, and on its own showing can hardly be a permanent solution of the problem.

(6) Total area, or better, total economic resources, included in the geographic unit studied. Change in this dimension is obviously an index of expansion of one unit at the expense of the shrinking of others. It is part of the picture, but raises all the questions of infiltration, aggression and war. If this is a recognized method of growth, the obvious way to promote it (or for intended victims to resist it) is to restrict consumption and divert all possible resources to preparedness for war. From the standpoint of welfare, comment is unnecessary.

More defensible, probably, would be an index of results achieved by an economy in possession of a given area of basic resources or an index that makes allowance for changes in this dimension.

#### 4 Stages of Growth or Decline

As to conditions of growth, I started with the assumption that these conditions differ for different historical situations and that, while they may have some common elements, they are probably to some extent unique to each case, including the same country in different stages of its development, and different countries in generally similar stages of development as well as at different stages.

There is an early stage in which agriculture and extractive industries absorb a major part of economic effort, and when improvement in

this area is the important thing, if only to afford a larger surplus above minimum subsistence, which may be devoted to other types of production which have greater potentialities of expansion. Then comes a stage in which growth concentrates increasingly on manufactures, especially when one area can produce manufactured goods for export to other areas, and can acquire a population greater than it can feed and supply with raw materials from its own natural resources. This in turn changes when other areas increasingly develop their own manufacturing, especially if they protect it by setting up trade barriers. There may be a stage in which it is true, as so often said, that as other countries develop more manufacturing, a country that has taken the lead in this development can exchange more manufactured goods with them, and not less. But it seems clear that this is not the final and universal word in this matter. Then comes a stage in which, while manufacturing output may continue to increase, the nation spends a smaller proportion of its total effort on it, and an increasing proportion on what Colin Clark has classified as 'tertiary' industries, including professional, personal and governmental services. Here we have an area in which quantitative measures become increasingly difficult to apply with satisfactory meaning; quality becomes more and more the important thing. Perhaps it is not necessary to spell out the proposition that the conditions favorable to growth differ, at least in their relative emphasis, at these different stages.

As to decline, it is often a relative matter -- relative to other economies that are expanding. If there is absolute decline, it seems not to represent a simple reversing of the processes and conditions of growth. It may be precipitated by sudden calamity, or may happen slowly, with gradual

climatic change, severe overpopulation or exhaustion of resources, possibly supplemented by stagnation of the technical progress by which these difficulties might be met and overcome. The case of Britain at present seems rather exceptional, since she needs to make a substantial and rapid increase in production, while submitting to a decline in real income and consumption, in order to balance her international accounts, having suffered losses of items that had previously balanced them. But a declining economy does not return to the more primitive states it has left behind. It retains the techniques it has once achieved; and its allocation of resources between primary, secondary and tertiary seems likely to be resistant to retrogressive change. Though some such change may take place, especially a shrinkage in tertiary industry, a country is not likely to revert to devoting most of its resources to primary production. And a country which has reached a fairly high level, and then declines, seems likely to devote serious efforts to diagnosing the causes of the decline and counteracting them if possible, by deliberate efforts.

##### 5 Conditioning Factors: Climate and Natural Resources

Climate and natural resources are basic; but it is a commonplace that favorable climate shifts from subtropical to temperate with advancing techniques; and with further advance, including air-conditioning and possible future climatic controls, and control of transmissible diseases, the importance of natural climate may be much reduced. It is commonplace also that natural resources are relative to a people's capacity to use them. Iron, coal, bauxite and uranium acquire significance at different stages of technical development. From the standpoint of growth, the important condi-

tions and resources are those that furnish the wherewithal for the next step of development, whatever that may be.

## 6 Quality of the Population

Much the same is true of the particular qualities and aptitudes of the population. It is commonplace that, with our harnessing of external power, muscular strength has diminishing importance, though it has not become obsolete, even in our system. The qualities in the population which are favorable to growth interlock also with the system of social controls of productive methods, among other things. Where rigid controls make methods highly static, the qualities that make for innovation get a chance only at certain points. I assume that in Medieval Europe, there was, on the whole, more chance in handicrafts than in agriculture, and perhaps in the latter part of the period more in transport and navigation.

But on the whole, in this period, the place where things were happening that were to lead to later material innovations was in the realm of scholarship and rudimentary pure science, where free inquiry was gradually loosening the shackles that held it. In promoting techniques, the monasteries were important. Later, under early nationalism, national governments were important, at least in importing and diffusing techniques developed elsewhere. Later again, as small-scale business enterprise developed, diffused ingenuity and enterprise became important; and later still, innovation became departmentalized into pure science, applied science, the woodshed inventor, the ingenious manual worker and the entrepreneur in all his guises (including the farmer and the public administrator) defining him for this purpose as the one who selects, adopts, rejects and promotes, from among the suggestions

that come from all the available sources.

As the process proceeds, education becomes a more important factor; at first for the few who act as leaders, then for the many who must know how to use and operate an accelerating flow of ever-new contrivances, and finally the education necessary for the universally-high standards of economic citizenship without which the modern interdependent economy cannot be run successfully -- except on a basis of undemocratic regimentation. This education is a matter that goes far beyond the school system, and needs to continue throughout one's active life.

This brings us to the moral qualities of the population. First come the qualities necessary for the successful continued operation of a system, at its existing level of technique, then come those needed for its growth to a higher level. The second do not displace the first, since the system needs to hold together while it is advancing. The exceptions -- cases of fundamental social revolution -- seem rare enough to prove the rule; and even Lenin is said to have remarked at one stage of the Russian revolution that, now that the proletariat had taken over the place and tasks of the former bourgeoisie, they must cultivate the bourgeois virtues. In a highly-static society, the qualities needed for continued operation seem to be mainly conventional leadership on the part of the few, and docile conformity for the many. In the individualistic stage they include a less conventional leadership, and respect for property rights, which could make terms with a more widespread readiness to try novel things in the realm of technique.

In the stage we have reached now, the requirements become vastly more exacting. There is need of loyalty, but not docility; and loyalty to the whole community must be effective in the face of conflicting loyal-

ties to closer and smaller groups, more closely related to the members' personal self-interest. This is necessary to economic growth, not so much because loyalty itself furnishes the positive incentive to improvements, but primarily because it serves to maintain in working order the system under which other incentives can work. And it is becoming an open question whether a system based on self-interest can commend the kind and degree of loyalty that has become necessary to this end. If not, this fact may outweigh the many and strong advantages of the private enterprise system from the standpoint of incentives to growth. A higher degree of democratic capacity is required, on a larger scale than ever before; because never before have we had to handle, on such a large scale, decisions that affect economic interests so directly and decisively. And the whole population needs to share this high quality.

Loyalty is a two-sided affair, requiring a population willing to be loyal and susceptible to available appeals, and a system of a sort capable of inspiring or commanding loyal responses. The common elements may take different forms and are combined in widely-different proportions under different systems. They may be listed as including myth, religion, philosophy or 'ideology', cultural and social activities and contacts, human relations on the job, appeals to self-interest and coercion. Religion for this purpose is construed broadly enough to include the anti-religious religion of Soviet Russia, and philosophy includes that of the professional philosophers, but only to the extent that it filters down into the attitudes of the people at large, or at least to the attitudes of leaders to whom the people respond, and who determine or influence the character of the system.

From this standpoint, the democratic system may be facing a dilemma.



If the system is, or is felt to be, owned by the people at large and operated for their benefit, they or their organized groups, may exploit it to an extent that cripples it for rendering them the ever-increasing benefits they demand, and so may defeat their own ends. But if it is, or is felt to be, owned and operated for the benefit of a privileged few, the people may cripple it by refusing their loyal cooperation. The only visible way out of this dilemma, if it arises, is some kind of authority -- call it an undemocratic element if you please -- authority either without privilege or without the kind and degree of privilege that is felt to be exploitive to an extent that vitiates the authority.<sup>1</sup> The boss must be felt to be an

<sup>1</sup>The best example I have encountered of authority without privilege is that of the Eskimo who explained that, because he was a chief, he had to work harder than others, to accumulate food enough to furnish the hospitality which his position required of him. In less simple communities, authority and privilege seem more nearly inseparable.

effective servant of commonly-approved ends, and his privileges acquiesced in as natural accompaniments of this function. I suspect that the majority of organized labor in this country do feel that, under the pressures of collective bargaining, the boss can be made to work for them as well as for himself, and that he works for them on the whole more effectively and progressively than he might if he were an official of a collectivist government - always provided his record in furnishing jobs is not too inadequate. That does not solve all questions, but it may afford a basis for at least preventing the democratic dilemma from turning into an impossible impasse.

More specifically, progress must not be paralyzed by output-limiting rules; and to that end it must be handled in such ways that it will not bring calamity upon numerous groups, and so drive them to output-limiting rules for what appears necessary protection. For example, are we better

off than the British -- for the moment -- in this respect, because this process of protective rules has not gone so far with us, and the pressure of private enterprise -- with whatever of competitive force may be back of it -- has resisted such rules on the whole more successfully? In a document such as this, it is obviously impossible to do more than scratch the surface of this major social question of the conditions and varieties of loyalty.

Before leaving the question of the quality of the population, it seems worth while to mention a matter that is not a very live present issue, but may become so, with advancing knowledge: namely, the question of biological quality. It has been fashionable recently to assume that there are no biological differences between individuals or groups within a population, chiefly because we do not at present know enough about them to prove such ideas as we may have. This seems an inadequate and unsafe basis for conclusions, and the more probable hypothesis appears to be that there are such differences: that some hereditary strains are better and more capable than others. It seems fair to assume that successful types have, on the average, traits that furnish a basis for high capacity, though it is equally likely that types that are relatively unsuccessful, by the standards and under the conditions of a particular social system, may also possess qualities which are valuable and could be successful in a different setting.

It seems highly likely that differences in the rate of increase of different hereditary strains are important: that economic advancement may be promoted by favorable selection and vice versa, that decline may be the penalty for failure of good strains to maintain themselves. It

would follow that a civilization can suffer through biological suicide of such strains, or more rapidly through their exile or liquidation. Mere success in a given system is an imperfect and undependable standard of valuable quality. And socially-valuable qualities are not unit biological characters, but depend on combinations of different genes, in ways about which we know too little at present to speak or act confidently. But such knowledge may grow.

## 7 Incentives

Another topic too large to cover is that of incentives. Where the individual produces for himself and his family, there is little problem; but also little chance for growth. In primitive societies with rudimentary division of labor, motives of social prestige and conformity seem to play a large part; but here again there is little room for growth. The great volume of economic growth has come under systems of individualistic incentives; which are not to be thought of as coextensive with material self-interest, but are really complex combinations of different kinds of opportunities and appeals. One tentative statement of principle might be that in proportion as the objects to which growing economic power shall be devoted are left to be determined by individual preferences, the appropriate incentives are the kind that individuals can offer -- namely, material inducements offered in exchange; since the general run of single individuals are not in a position to turn on or off the great forces of social approval or disapproval, and the multiplicity of goods and services, and people's differences of taste and judgment about them would confuse the issue. This means principal reliance on rewards, not penalties. In proportion as growth is directed to a socially-predetermined set of goals,

it becomes possible to make more use of social approval and disapproval, and penalty-incentives, in matters of specific and positive performance, rather than reserving them mainly to deter people from doing actual wrong, as under the individualistic system.

## 8 Capital

Among material conditions, one of the foremost is a supply of capital, or of power to produce it, adequate to the next steps in advancing techniques. Along with this go the financial institutions necessary for making the capital available and mobilizing it. This amounts to saying that, given openings for the use of increased capital, supply and ways of making it available are important; but the openings for use are presumably more crucial. They may exceed or fall short of the voluntary savings-potential of the economy. If they exceed it, the potential rate of growth is limited unless other sources than voluntary savings are provided, under a five-year plan or otherwise. If openings fall short of voluntary savings-potential, there is danger of stagnation. The first difficulty is characteristic of a poor country or one faced with a sudden need for extraordinary expansion; the second is a difficulty to which a rich country may be exposed in the absence of such special need for expansion, or of successful counter-measures of a deliberate sort.

For a quick expansion, existence of reserve productive capacity, in the form of fixed capital, is a facilitating factor. But for the kind of long-term expansion which depends on qualitative improvement in the efficiency of production, a heavy fixed investment in specialized facilities, which would be superseded by the new method, can be a retarding factor, unless there is sufficiently strong pressure, from competition or otherwise,

to enforce a readiness to scrap existing equipment. If capital charges on such expendable equipment are 20 percent of total cost of 'value added', it takes a larger percentage economy in direct operating costs to make up for the loss from retiring physically-usable equipment, and replacing it than if these capital charges are only 10 percent of total costs. More strictly, there are probably circumstances in which the cost of unexpended value of the old equipment is a pertinent factor, and others in which it is only the costs on account of the new equipment which replaces it, that count in the reckoning; but in either case the heavy capital investment appears to be a force making for conservatism. This force can be increased or diminished by tax laws.

## 9 Institutional Conditions and Systems

As to institutional conditions, growth can take place under widely-different institutional systems. And it is not a very hazardous generalization to conclude that different kinds of growth are favored by different kinds of institutional frameworks. It is difficult to see how the exuberant expansion of this country in the nineteenth century could have been brought about under anything but an individualistic system, which also accounts for vast wastes and destructiveness. As for Russia since 1917, it may be debatable whether she could have equalled her quantity of expansion under some other system, with the help of foreign loans. But if it was to be mainly autarchic, it seems quite probable that the necessary abstinence could have been secured only on a compulsory basis.

It seems likely that a strongly-individualistic system will ultimately encounter decline unless its individualism is balanced by controls to conserve essential social assets, including the imponderable asset which

centers in the individual's sense of a stake in a community which can be trusted to treat him as a member of a community should be treated, taking care and responsibility for his access to opportunity, and for his fate if major calamity strikes. Or if the system is an authority with complete control, it seems morally certain to suffer heavily from corruption, waste and bureaucratic stagnation, unless it is either driven by such a paramount motive as national defense, or possesses a powerful motivating "ideology", amounting to a religion, which commands the active loyalty of those who play roles of leadership and responsibility, and at least the passive acquiescence of the 'underlying population' in such a regimented system. One danger is that such an ideology may impair basic scientific research by interfering with freedom of inquiry, to the long-term detriment of economic progress.

As to whether an aristocratic or a democratic system is more favorable to growth, once more it appears that the answer must be: "It depends". Growth centering in fine handicrafts, with a large place for the fine arts, seems to be favored by an aristocratic system of the leisure-class variety; but such a system would be an effective barrier to the kind of growth represented by modern mass-production, which requires widely-diffused mass consuming-power. And the modern type of system is at least relatively, and probably absolutely, unfavorable to the development or maintenance of handicrafts; largely because their products become wellnigh prohibitively expensive, compared to machine-made substitutes. Whether an aristocratic system is favorable to growth or not would seem to depend also on the character of the aristocracy: on whether it is interested in such things, and on whether it is vigorous or effete. If it is mainly interested in war, industry may suffer; but even that is too simple a generalization,

since war, with its massed demand for identical munitions, has been responsible for notable steps in the development of mass-production and interchangeable parts -- chiefly after the introduction of firearms and national armies.

It seems probable that there have been stages in which national growth has been promoted by high profits, gained at the expense of degrading exploitation of labor, including early stages of the industrial revolution when prices were rising and money wages failed to keep pace. In the handicraft stage, with an aristocracy that will consume all that can be produced, such exploitive prosperity might be well-sustained; but in the stage of factory-production, it would seem to depend to a very large extent on finding a market for the product abroad. When productivity outgrows this resource, it has also outgrown the possibility of prosperity based on the labor of a working-class so impoverished that they cannot themselves afford a substantial market for the products they create. From then on, prosperity must be based on widely-diffused consuming-power.

#### 10 Types of Growth

Much of what might be said under this heading has already been suggested in connection with other topics. Long-run expansion is a matter of population-growth and the long-run trend of increased productivity. They have their vicissitudes, but seem to be fairly steady except in times of major wars. As already indicated, such growth may be directed to giving the people whatever they may individually want, or it may be concentrated on specific community or governmental ends, generally military power and national prestige.

On the other hand, there may be rather sudden demands for rapid growth to meet the requirements of some new situation, amounting to an emergency. This generally calls for more rapid growth than individualism brings about. Or if individualism could be trusted to respond to the emergency demand with adequate volume of output, still it would be dividing its energies between producing goods to meet the national need, and producing superfluities and luxuries for the producers themselves to spend their swollen incomes on -- superfluities which detract from the meeting of the national emergency rather than contribute to it. War is an obvious example, and also the postwar emergency conditions of the European countries that have suffered most heavily. Growth of this emergency sort requires positive controls of the 'planning' variety, while growth of the other sort can easily be left on an individualistic basis, if the necessary basic conditions are present.

Some kinds of growth are sound and self-sustaining and others are based on a wasting of the heritage of resources that is bound to make them temporary. Some examples can be easily classed as destructive or parasitic; the difficulty is to be sure that there are any modern examples of growth which may not, in the light of hindsight, turn out to have been of that character. All are based on utilization of non-reproducible natural resources; all are to some extent built on utilizing the natural resources of less-developed areas, in ways that may be mutually helpful for as long a future as it is pertinent to think about, or may turn out to be parasitic and temporary. It seems that Europe, that tiny corner of the earth's surface, grew and prospered off the natural resources of other and larger areas; and that now all the world is trying to imitate that way of prosperity, while its food-production fails to keep pace with the growth of



population. For the world as a whole, it appears that one of the urgent requisites for avoiding decline is the conservation of our wasting heritage of food-producing soil. Presumably it will be some time hence, if ever, that we shall be able to do without the soil, and feed ourselves with synthetic chemicals. In the meantime, growth based on concentrated industrialism may be regarded as unbalanced and vulnerable.

## 11 Conclusion

It is naturally impossible to exhaust the subject. The above are a few explorations, depending largely on facts of fairly common knowledge, and with no serious attempt to check and verify the hypotheses presented. These are to be regarded as tentative, as is appropriate in a session concerned with charting questions which subsequent research may try to answer. In general, I have presented evidence for the thesis that conditions favorable to growth are different at different stages in the development of the techniques of production, or under different social or political systems, or for different kinds of growth, spontaneous or forced by pressure of emergency; and that growth may be sound or unsound self-sustaining or temporary and parasitic in various ways, some of which can be identified with the aid of historic hindsight, but some of which are bound to remain open to conjecture. There seems to be no danger that research will answer all the questions that confront us in connection with this subject.